

## **APPARATUS FOR SAFELY, COMFORTABLY, AND COMPLETELY BATHING ONESELF**

### **1. Field of the invention**

The present invention relates to bathing devices and, more particularly, pertains to assisting the bather obtain a comfortable, safe, and complete bath without the aid of another person.

### **2. Description of the Prior Art.**

A variety of bathtub inserts are known in the art. A number of these devices in different fulfillment intend that persons safely get into and out of a conventional tub. For instance, US Pat. No. 4,574,408 to Dentler discloses a bathtub platform lift device, US Pat. No 5,855,028 to Colbert discloses an inflatable system for bath lift device, US Pat. No 5, 129,112 to Shafer discloses a chair lift device. While all of these devices fulfill their respective, particular objective and requirements, the aforementioned patents do not disclose an apparatus permitting a person to bathe himself/herself not only safely but also completely (including back, bottom, and feet) without an assistant.

US Pat. No. 3,040,335 to Gellmann and US Pat. No. 4,150,445 to Bailey shown a shower chair assembly whereby the sprays, directed from under the seat, can cleanse the ano-genital areas of the body. However, the users of both of these devices can't completely bathe oneself without assisting with another person. Furthermore these suggested devices are too complicated and unacceptable for the present purposes due both to the relatively high initial cost,

and also to the loss or restriction of the facility for normal use when anyone wishes a regular shower or bath.

### **3. Summary of the invention.**

It is an essential objective of the present invention to provide an apparatus for bathing in safety and comfort for a broad category of users, including elderly and disabled persons.

It is another objective of the present invention to provide a bathing apparatus that the user can operate safely in sitting position without the aid of another person.

It is still another objective of the invention to provide a bathing apparatus, which does not require any special modification to a conventional tub structure.

It is a further objective of the present invention to provide a bathing apparatus with elements for bathing all parts of one's body including back, seat, and feet.

It is yet another objective of the present invention to provide a bathing apparatus that does not require that it be moved out in cases when anyone would want a regular shower or bath.

A further objective of the present invention is to provide a bathing apparatus, which will conform to conventional forms of manufacture, be of simple construction, easy to use, economically feasible, long lasting, and relatively trouble free in operation.

These together with other objectives of the invention, along with the various features of novelty, which characterize the invention, are pointed out with particularity in the claims annexed to and forming a part of this disclosure. For a better understanding of the invention, its operating advantages and the specific benefits attained by its uses, refer to the accompanying drawings and descriptive matter in which there are illustrated preferred embodiments of the invention.

### **4. Brief Description of the Drawings.**

FIG. 1 is a perspective view of the preferred bathing apparatus made in accordance with the present invention;

FIG. 2 is a sectional view taken along line 2-2 of FIG. 1 with portions broken away illustrating the primary structure of the carriage and its drive mechanism for moving up and down;

FIG. 3 is a perspective view of the reciprocation belt;

FIG. 4 is a schematic view of the drive mechanism for providing the belt in reciprocating movement;

FIG. 5 is a perspective view of the appliance for bathing and massaging the feet;

FIG. 6 is a perspective view of the appliance for bathing and massaging the feet in the process of bathing;

FIG. 7 is a schematic view of the water supply system;

FIG. 8 is a cross-sectional view of the chair-sprinkler taken along line 8-8 of FIG. 1.

### **Description of the Preferred Embodiment**

✓ The present invention is an apparatus for completely bathing by the user himself/herself all his/her body including back, seat, and feet. The apparatus (see FIG. 1) includes a frame 10 with posts 11 and 12 on which slides a carriage 20 with means of reciprocating belt 30 and showering means <sup>(FIG. 7)</sup> 99 for soaping and showering bathers back, a water supply system 40, a chair 50, and an appliance 70 for bathing and massaging the bathers feet. The movement of the carriage 20 up and down (FIGS. 1 and 2) is provided by drive means 80 having two sheaves 15 rigidly attached on a rotating axle 17, a gear-motor 81 which operates the axle 17. The carriage 20 by ropes 18, to be thrown on grooves of the sheaves 15, is connected with counterweights 19 to provide easy movement of the carriage. The means of reciprocating belt 30, as shown in FIG. 3, consists of a permanently installed belt 110 and a removable piece of bast 120. The belt 110 includes a synthetic strap 41, a rope which forms a loop 43, adjustable cord which forms a second loop 45, and a grip 35. Connecting the rope and the cord to the synthetic strap 41 are provided by stitching or gluing.

As it can see in FIGS. 1 and 2 the means of reciprocating belt **30** is situated on the rolls **22** of the carriage and joined by grip **35** (FIG. 4). The loop **45**, which is made from adjustable cord, holds the belt **30** in tension position. The grip **35** has a hook **37** (FIG. 3) for effecting a reciprocating motion to the belt **30**. The removable piece of bast **120** has two straps **31** and **32**. The strap **31** is made of a special bathing material, from natural fiber loofah, which is excellent for cleansing the skin. The other strap **32** is made from regular soft cloth. Both straps **31** and **32** are stitched together so that between them is formed one or more pockets **61**, in which through holes **62** can be pumped soap. In the process of bathing by pressure from the users back this pumped soap goes out through small holes in the strap **31** (not shown) to form lather. Attaching the piece of bast **120** to belt **110** is provided by quick fastener strips **44** and **44a** (market "sticky back" of the Velcro Co.) or the like.

Reciprocation of the belt **30** as it seen in FIG. 4, is provided by gear-motor **65**, which is installed in water resistant case and mounted on the carriage **20**. Crank **67** and connection rod **68** transfer the motion from the gear-motor **65** to the belt **30**.

(FIGS. 2 and 7)

The means **99** for showering the users back includes a hose with numerous holes **53** or one or more showerheads attached to carriage **20** and operated by valve **98** (FIG. 7). After covering the back with soap the user can washing it by open valve **98** and moving the carriage **20** up and down.

Washing of the feet (from knee and lower) is a problem not only for elderly people but also for everybody especially for washing between toes and nearer to foot. This problem will be solved by using an appliance **70** (FIGS. 5 and 6). The appliance comprises a base **100** preferably molded from plastic in a one-piece construction, removable piece of bast **130** and a set of massaging attachments **140**. The upper portion of the base **100** is a straight strip **71** with two handles **72**. In the middle part of the strip **71** the thickness is smaller for easy bending (FIG. 6). By two legs **74**, which apart about 5", the strip **71** is connected with lower portion **75** to form an opening **79** for massaging the feet at edges of the opening. The lower portion **75** has the form of a broken cylinder. But when the

bather bends the upper portion **71** of the base **100** the edges **76** and **77** of the lower portion **75** are closed up to form approximately a circumferential construction. To the inside surface of the portion **75** by quick fastener strips **46** and **46a** is attached the piece of bast **130**, which preferably has the same construction and size as the piece of bast **120**. The portion **75** has also numerous holes (not shown) for fastening the set of massaging attachments **140**. These attachments comprise two pins **82** for cleaning between toes of the feet and several interchangeable strips **83** having numerous mechanical massaging protrusions such as knobs **84**, and brushes **85**. The strip **83** with knobs **84** and the pins **82** are preferably molded from suitable materials, such as known elastomeric and other rubber-like materials, which has some elastic capability. Said materials provide desirable massage textures, soft or hard, coarse or fine.

The water supply system **40**, as shown in FIG.7, comprises a valve **91** for directing water for bathing (arrow "A"), or taking only shower (arrow "B"), a valve **92** for supplying water to hand shower **90**, a valve **98** for supplying water to means **99**, a valve **93** for providing spray by coil **60** through seat of the chair **50**, and three pieces of hose **94**, **94a** and **94b** of suitable length for connection with the valves. The installation of the water supply system **40** in a common bathroom includes unscrewing domestic showerhead **96** (shown by dotted lines) and connecting it to the end of the pipe **97** of the system **40**.

The chair **50** (FIG. 1) with a few slots **51** in the seat **52** is mounted to the frame **10** of the apparatus. Under seat **52** is attached a coil **60** (FIG. 7), which has same spout holes **53** (FIG. 8) as the means **99**, placed along the slots **51** of the chair to provide a shower one's seat.

The apparatus of the present invention (FIG. 1) is equipped with numerous rubber suction cups **5**. These cups fasten to the walls of the bathroom and to the horizontal upper surfaces of the tub, to stabilize the apparatus on the tub and avoid any structural modification. The apparatus is equipped also with a small removable shelf **56** for holding bathing accessories and with plastic baffle **57**, to avoid splashing water on the floor. Both the shelf and the plastic baffle can be molded in a one-piece construction and fastened to the frame **10**.

For bathing oneself by using apparatus according to the present invention, the user adjusts the consumption and temperature of the water, directing it by valve **91** on arrow "A" (FIG.7), and filling soap into the pockets **61** of the pieces of bast **120** and **130**. Then he sits on the chair **50** and washes all accessible parts of the body by using soap, piece of bast, and hand shower **90**. Using the means of reciprocating belt **30**, which covers the bathers back with soap, and showering means **99**, provides bathing the back. The next step in the process of bathing oneself in the seating position is washing one's bottom. For doing it the user covers his bottom with soap, which is accessible, and showers using the coil **60** by turning the valve **93**. The last operation in the process of bathing oneself is washing the feet, which is facilitated by the appliance **70**. As it can be seen in FIGS. 5 and 6 the bather squeezes the lower portion **75** around each foot and moves the appliance **70** up and down to cover the feet with soap. After that he uses the shower. Two pins **82** of the appliance **70**, which have different textures, provide cleaning the places between toes of the feet. Also, for massaging the back and the feet the bather can use the means of reciprocating belt **30** and the massaging attachments **140**.

The space occupied by the apparatus of the present invention is small and allows taking a shower or bath without removing the apparatus from the tub.

Although particular embodiments of the present invention have been illustrated and described, it will be apparent to those skilled in the art that various changes and modifications can be made without departing from the spirit of the present invention, and it is intended to cover in the appended claims all such changes and modifications that fall within the scope of the present invention.